trimethylene, by G. Gustavson.—Short report of a journey to Novaya Zemlya in 1896, for the observation of the eclipse of the sun, by Prince B. Galitzine. The eclipse observations, as is known, were made under fairly favourable conditions, through a light veil of cirrus clouds. After the eclipse, the expedition made an excursion inland in the high mountain region which covers the island in the north-east of Karmakuly. The excursion lasted only nine days. A glacier, two miles long, was discovered at the head of Karmakulka River; very large *neves* are a characteristic feature of this part of the highlands.

No. 4.—Study of the anatomy of *Acanthobdella peledina*, by A. Kowalevsky (in French), with six engravings.—Report of O. Backlund on his journey to Paris and Odessa, for the unification of the constants accepted in astronomical ephemerides.—On the testing of glycerine and the analysis of wax, by F. Beilstein and R. Rinne (in German).—Note on a dry fog observed in Samara.

SOCIETIES AND ACADEMIES.

LONDON.

Entomological Society, January 19.—Annual Meeting.—Mr. R. Trimen, F.R.S., President, in the chair.—The balance-sheet for the past year, showing a balance in the Society's favour and an improvement in the financial position, was read by Mr. A. H. Jones, one of the auditors. The Secretary then read the Report of the Council, from which it was seen that during 1897 the Society had lost 7 Fellows by death and 5 by resignation, and had elected 24, the total number now on the list being 398. The *Transactions* for the year contained 19 memoirs, illustrated by 11 plates, and extending to 434 pages. As a mark of respect to the late Mr. J. W. Dunning, the Council had decided to present his portrait as a frontispiece to the volume of *Transactions* for 1897. It was announced that the following Fellows had been elected as Officers and Council for 1898:—President: Mr. R. Trimen, F.R.S. Treasurer: Mr. R. McLachlan, F.R.S. Secretaries: Mr. W. F. H. Blandford and Mr. F. Merrifield. Librarian: Mr. G. C. Champion. Other Members of Council: Mr. W. Bateson, F.R.S., Dr. T. A. Chapman, Sir G. F. Hampson, Bart., Mr. M. Jacoby, Mr. A. H. Jones, Dr. P. B. Mason, Mr. O. Salvin, F.R.S., Mr. J. W. Tutt, Mr. G. H. Verrall, and Mr. C. O. Waterhouse. The President nominated as Vice-Presidents Sir George Hampson, Mr. McLachlan, and Mr. Verrall, and his address was then read on his behalf by the Secretary. After briefly reviewing the position of the Society, and referring to the losses sustained by deaths during the past year, especially those of Dr. Fritz Müller, Mr. J. W. Dunning, and Captain E. Y. Watson, the President proceeded to review the subject of mimicry. (An abstract of his address is printed in another part of this issue of NATURE.) On the motion of Lord Walsingham, seconded by Mr. F. D. Godman, a vote of thanks to the President for his able and exhaustive summary of the subject, and for his services during the past year, was carried by acclamation.

Geological Society, January 5.—Dr. Henry Hicks, F.R.S., President, in the chair.—On the structure of the Davos Valley, by A. Vaughan Jennings. Evidence was brought forward to show that the level area, about four miles in length, near Davos, is occupied by superficial deposits, and that the lateral talus-fans there have been cut through at a relatively recent date since their accumulation; that the northern end towards Wolfgang is blocked by moraine-material of great thickness, but for which the Davoser See would drain north to the Landquart, carrying with it the waters of the Fluela and Dischma; that the contour-lines suggest the former existence of a far larger lake stretching south towards Frauenkirch, and that in that part there is proof of the previous existence of a great detrital fan sufficient to account for the existence of the lake in question.—Sections along the Lancashire, Derbyshire, and East Coast Railway between Lincoln and Chesterfield, by C. Fox-Strangways. The portion of the line considered in this paper occupies a distance of about forty miles, and runs nearly at right angles to the strike of all the beds from the Lias to the Coal Measures.

Royal Meteorological Society, January 19.—Mr. E. Mawley, President, in the chair.—The Secretary read the report of the Council for the year 1897, showing that there had been an increase in the number of Fellows and that the finances were satisfactory.—The President, Mr. Edward Mawley, then gave an address on weather influences on farm and garden crops, in which he pointed out the intimate connection between meteorology, agriculture and horticulture. He explained the special characteristics of the climate of the British Isles as regards temperature, rainfall, &c. Of all the influences brought to bear on vegetable life by the atmosphere, he considered temperature to be the most powerful and far reaching, and only second to this came rainfall. The leading effects of snow, wind and sunshine, as well as of prolonged droughts, severe frosts and persistent rains, were also described. He then dealt with the influence of different important weather changes on such farm crops as wheat, roots, grass, &c., as well as on fruit trees, vegetables, and flowering plants in the garden. In his concluding remarks he called attention to the great want of experimental farms in conjunction with meteorological stations being established in this and other countries in Europe. For it was only by the examination of meteorological observations, together with weekly records of the extent and character of the growth made by our leading crops, that the close connection existing between weather changes and their influences on such crops could be clearly traced.—Mr. F. C. Bayard was elected President for the year.

Zoological Society, January 18.—Dr. Albert Günther, F.R.S., Vice-President, in the chair.—The Secretary exhibited, on behalf of Prof. Robert Collett, a specimen of a supposed hybrid between the Fieldfare (*Turdus pilaris*) and the Redwing (*T. iliacus*).—Mr. W. E. de Winton exhibited and made remarks on a skin of a zebra from British East Africa, belonging to a form described by Herr P. Matschie as *Equus burchelli böhmi*, obtained by Captain S. L. Hinde at Machakos.—Mr. L. W. Byrne read a paper on the general anatomy of the fishes of the order *Holocephali*. The paper contained a brief account of the anatomy of the soft parts of *Chimæra monstrosa* and *Callorhynchus antarcticus*, and a comparison of them with a typical Elasmobranch such as *Scyllium*.—Dr. W. G. Ridewood read a paper on the development of the hyobranchial skeleton of *Alytes*, in which he showed that of the two axial cartilages present in the larval hyobranchial skeleton of this Batrachian the anterior one disappears completely, while the posterior, which is remarkable in extending back to the laryngeal sinus, persists as the central part of the body of the hyoid.—Mr. F. O. Pickard-Cambridge read a paper on the Cteniform Spiders of Africa, Arabia, and Syria, which contained a list of the species already described from these countries, with notes on their identities, and descriptions of nine new species.—Mr. L. A. Borradaile gave an account of the Crustaceans of the order Stomatopoda represented in the collections made by Messrs. J. S. Gardiner and Dr. A. Willey in several of the South Pacific Islands. Ten species were enumerated, of which three, viz. *Gonodactylus espinosus*, *Pseudosquilla oxyrhyncha*, and *Squilla multituberculata*, were described as new.

EDINBURGH.

Royal Society, January 17.—Rev. Prof. Flint in the chair.—Dr. Hugh Marshall read a note on the axes of symmetry which are crystallographically possible. In this paper the author gave a proof simpler than that of Gadolin ("Mémoire sur la déduction d'un seul principe de tous les systèmes crystallographiques avec leurs subdivisions"), namely, that if the law of rational indices be assumed, only digonal, trigonal, and hexagonal axes are possible with crystals. The proof rests on the assumptions, that an axis of symmetry is necessarily a possible edge or zone axis, and that there are possible edges perpendicular to any axis of symmetry, *i.e.* that the plane to which it is normal is a possible face. These assumptions are formally proved, and then the proposition that an axis of symmetry of the nth order is crystallographically possible only when $\cos 2\pi/n$ is rational, is proved generally. The value of n is limited by the laws of rational indices to those cases where $\cos 2\pi/n$ is rational. Further, from the nature of an axis of symmetry, n must be a whole number. It is shown by N. Boudaief, in the appendix to Gadolin's paper, that the only values of n which satisfy these two conditions are 2, 3, 4, and 6. Consequently only digonal, trigonal, and hexagonal axes of symmetry are possible with crystals.—Prof. Geikie communicated a paper, by Mr. John S. Flett, on the Old Red Sandstone of the Orkneys.—Dr. R. H. Traquair, F.R.S., had a paper on the fossil fishes of the Orcadian series of the Old Red Sandstone of Scotland. As many as fifty-eight species of fossil fishes had been, up to 1888, named and described from the Orcadian rocks of the Moray Firth area, of Caithness, and of Orkney; but Dr. Traquair showed that their nomenclature had fallen into a state of chaos, principally by the unnecessary multiplication of species upon deceptive characters, as well as, to some extent, by the confusion of forms which actually were distinct. The previous list was accordingly reduced from fifty-eight to twenty-four, while, during the past ten years, Dr. Traquair has added nine new species, making the entire number up to thirty-three. Of these new species, three are described for the first time in the present paper, namely, *Homocanthus crassus* and *Asterolepis orcadensis*, from Orkney; *Cheiracanthus striatus*, from Caithness. The rest of the paper consisted of an enumeration of the genera and species of Orcadian fossil fishes, their synonymy, and the localities in which they are found in the three areas—Moray Firth, Caithness, and Orkney. No fishes have been found as yet in the Orcadian beds of Shetland. Of the thirty-three species, twenty-seven occur in Caithness, twenty-four in Orkney, and seventeen in the Moray Firth beds, the small number in the last-named area being apparently due to the absence of certain geological horizons, which are represented both in Orkney and in Caithness. The paper was illustrated by limelight pictures of the principal forms of Orcadian fossil fishes, both as they occur in the rock and as restored by the author.

Mathematical Society, January 14.—Mr. J. B. Clark, President, in the chair.—The trisection of a given angle, by Mr. Lawrence Crawford.—The centre of gravity of a circular arc, by Mr. G. E. Crawford.—A demonstration of the apparatus used in practical skiagraphy by the Röntgen rays was given by Dr. Harry Rainy.

Paris.

Academy of Sciences, January 17.—M. Wolf in the chair. —Notice of the life and works of M. d'Abbadie, by M. Hatt.—On some results relating to the phenomena discovered by M. Zeeman, by M. A. Cornu. Further improvements in the methods of observation give results not altogether agreeing with those of the original experiments. The action of the magnetic field upon the period of vibration of the radiations from a luminous source appears to depend not only upon the chemical nature of the source, but also on the nature of the group of rays in the spectrum to which each radiation belongs, and on its function in this group. If the direction of the field observed is normal to the lines of force, each ray becomes four, and not three as originally announced by Dr. Zeeman.—Remarks by M. Henri Becquerel on the preceding communication.—On the separation and estimation of iodine, bromine, and chlorine, by M. Ad. Carnot. The separation is based upon the removal of iodine by carbon bisulphide after acting upon the mixture with nitrous vitriol; the bromine is then set free by chromic acid at 100°, and removed by the same solvent. Fairly satisfactory analytical results are appended.—On the decimal hour system, the divisions of the day and the circle, and the geographical table, by M. Henride Sarrauton.—Occultation of the Pleiades by the moon, January 3, 1898, observed at the University of Paris, by M. G. Bigourdan.—Occultation of the Pleiades group, observed at Lyons, by M. Ch. André.—On the four large planets, by M. Émile Anceaux. Certain simple numerical relations have been found to exist between the masses and major axes of orbits of Jupiter, Neptune, Saturn, and Uranus.—On the representation of uniform analytical functions, by M. Paul Painlevé.—On the convergence of series representing the integrals of differential equations, by M. Paul Staeckel.—On the irregular integrals of linear differential equations, by M. J. Horn.—On the existence of integrals of a partial system, determined by certain initial conditions, by M. Riquier.—On the systems of triply orthogonal surfaces where the surfaces of a family admit of the same spherical representation of their lines of curvature, by M. Maurice Fouché.—On the basis of projective geometry, by M. H. G. Zeuther.—On the problem of the cooling of a heterogeneous bar, by M. W. Stekloff.—On gas mixtures, by M. A. Leduc. The author proposes to replace Dalton's law, that the pressure of a mixture of gases is equal to the sum of the pressures that each would occupy in the same receptacle, by another, that the volume occupied by a mixture of gases is equal to the sum of the volumes that the component gases would occupy under the conditions of pressure and temperature of the mixture, the two statements being only identical when Boyle's law holds exactly.—Determination of the density of gases on very small volumes, by M. Th. Schlœsing, jun. The method described gives very fair results with quantities of gas as small as 6 c.c., and requires neither the use of a barometer nor a balance. A column of the gas whose density is to be determined is balanced hydrostatically against a column of gas of known density and absorbable by caustic potash, such as carbon dioxide. The manipulation and calculation are extremely simple. Further details and numerical results will be given in a later paper.—On an apparatus called the hermetical pourer, by M. R. Personne de Sennevoy. With the apparatus in question, a diagram of which is given, a portion of a liquid contained in a hermetically closed vessel can be extracted without introducing any other fluid into the vessel.—On the thermodynamic potential, by M. A. Ponsot.—On the spectrum of the kathode rays, by M. Birkeland.—On the spectrum of cadmium in a vacuum tube, by M. Maurice Hamy. The wave-lengths of the ten principal lines were measured with an accuracy of six significant figures.—On the absolute value of the magnetic elements on January 1, 1898, by M. Th. Moureaux. The calculations are made for the elements at Paris, Nice and Perpignan.—Contribution to the study of the electric furnace, by MM. Gin and Leleux.—New method for measuring the intensity of a magnetic field, by M. E. Bouty. A liquid conductor is allowed to flow normally to the lines of force in the field to be measured. The constant electromotive force induced in the liquid vein is measured by means of the capillary electrometer. It was found that tap water served very well for the conducting liquid, and by increasing the velocity of flow the sensitiveness of the method can be increased almost indefinitely. The fields measured were of the order of 0·5 C.G.S. units.—On a thermometric mercury ammeter, by M. Ch. Camichel. A thermometer bulb is placed in a glass tube slightly larger, and the narrow annular space filled with mercury through which the current is passed. The instrument described measures up to 2 amperes with an approximation of 1/200th.—Discharge by the Röntgen rays. Secondary effect, by M. Jean Perrin. The hypothesis provisionally put forward of a superficial phenomena is now shown to be improbable.—On the electrical resistance of crystallised silicon, by M. Fernand Le Roy. The resistance of silicon is about 1300 times that of electric light carbon, and diminishes on heating, a decrease of about 40 per cent. corresponding to a rise of 800° C.—On some new compounds of the cerite metals, by M. Andre Job.—On aldehyde ammonia, by M. de Forcrand. Calorimetric data of the solutions of this substance.—On β-isopropyl-γ-acetylbutyrate of ethyl and on the stereoisomeric acids derived from it by condensation, by MM. Ph. Barbier and V. Grignard.—On the oxidation of ammonia compounds by the ferments of the soil, by M. E. Demoussy. Under the influence of the bacteria of the soil the amines are oxidised to ammonia, and this goes to nitrite and nitrate in the usual manner. The more complex the amine the slower is the course of oxidation.—Bacilli of beriberi, by M. Gustave Nepveu. Three forms of bacilli differing in size (8 μ, 3 μ for the two larger) were found, but it is not quite certain that these are distinct forms.—On the structure of the cirrophore in the Polynoïdia, by M. G. Darboux, jun.—On the elongations of the anterior portion of the body of the Prosobranchia and their influence upon the corresponding region of the digestive tube, by M. Alex. Amaudrut.—On a cœlomic gregarian presenting a phase of asporulic multiplication in the evolutive cycle, by MM. Maurice Caullery and Félix Mesnil. The new species is a parasite in the general cavity of *Dodecaceria concharum*, and is named *Gonospora longissima*. —Sex and molecular dissymmetry, by M. Félix Le Dantec.—Some remarks by M. Edmond Perrier on the preceding paper.—On the supposed chloragogenesis of the general cavity of the Opheliæ, by MM. J. Kunstler and A. Gruvel.—On the existence of a malacological polybathic fauna at great depths in the Atlantic and Mediterranean, by M. Arnould Locard. Outside the well-defined littoral zones there exists both in the Atlantic and Mediterranean a fauna capable of living and developing at depths of over 2000 metres, to which the name polybathic is given. This fauna contains many Gastropods, and is especially rich in Scaphopods and Lamellibranchs.—On the origin of the double sheath of the root of *Tropœlum*, by M. Camille Brunotte.—On the preparation of gentianose, by MM. Ed. Bourquelot and L. Wardin.—On the germination and hibernal fructification of the truffle, by M. A. de Gramont de Lesparre.—On the mineral layers of oolitic iron of the new basin of Briey, by M. Georges Rolland. Complete geological sections of these important beds of Meurthe-et-Moselle are given.—On the caverns of Sauve (Gard), and the form of the reservoirs of springs and calcareous soils, by MM. E. A. Martel and A. Viré.—Considerations on the oceanic circulation in the Bay of Biscay, by M. I. Thoulet.—Observation of a double meteor, at Vannes, on January 3, 1898, by M. Georget.—Remarks by M. Callandreau on the preceding note.

In the abstract of the *Comptes rendus* of the meeting of the Paris Academy of October 26, a paper by M. Gaston Séguy on a new method of reducing the time of exposure in radiography was referred to (November 4, 1897, p. 24). Dr. Max Levy writes from Berlin to call attention to the fact that the method described originated with him, and that M. Séguy acknowledged such to be the case in the course of the paper communicated to the Paris Academy.

NEW SOUTH WALES.

Linnean Society, November 24, 1897.—Prof. J. T. Wilson, President, in the chair.—The President formally announced the death of Prof. T. Jeffery Parker, F.R.S., of Dunedin, a corresponding member of the Society, on November 7. It was resolved that an expression of sympathy from the Society should be tendered to Prof. Parker's family.—The President commended to the favourable notice of the members the report of a meeting held at Melbourne, for the purpose of forwarding the movement to establish some permanent memorial of the late Baron von Mueller. It was resolved that it was desirable that steps should be taken to commemorate in some suitable way the late Baron's work, and an influential committee was appointed to carry out the proposal. It is hoped that a sufficient sum of money will be forthcoming to provide for a bust or medallion of the Baron, as well as for the endowment of a medal or prize to be associated with the Baron's name, and to be awarded from time to time in recognition of botanical, pharmaceutical, or horticultural work in the various Australasian Colonies. Subscriptions in aid of this project may be sent to Prof. Baldwin Spencer (The University, Melbourne), one of the hon. secretaries.—Plants of New South Wales, illustrated. Part ix., by R. T. Baker. The species figured and treated of are *Acacia gladiiformis*, A. Cunn., *A. obtusata*, Sieb., *A. rubida*, A. Cunn., and *A. triptera*, Benth., var. nov.—On some New South Wales Fungi, by D. McAlpine. Seven species occurring on the leaves or bark of indigenous trees are recorded. Of these four are described as new, and two are recorded from this Colony for the first time.—Observations on the Eucalypts of New South Wales. Part iii., by Henry Deane and J. H. Maiden. In this third contribution the species dealt with are *Eucalyptus hæmastoma*, *E. Sieberiana*, *E. stricta*, *E. obtusiflora*, and some allied forms.—On some Australian *Eleotrinæ*. Part ii., by J. Douglas Ogilby. Five additional species of Australian eleotrins are described.—On two new Australian fishes, by J. Douglas Ogilby. The two species described are *Harengula stereolepis*, from Torres' Straits, and *Decapterus leptosomus*, a mackerel-scad which annually visits Port Jackson but has hitherto escaped notice.—A contribution to the zoology of New Caledonia, by J. Douglas Ogilby. After alluding to the meagreness of our knowledge of the biology of the island, the author gives a list of the fresh-water fishes referable to six species brought back by Mr. Hedley, with observations thereon.—On Australian *Termitidæ*. Part iii., by W. W. Froggatt.—Eleven species of *Termes*, of which ten are new, and seven species of *Eutermes*, of which five are new, are described. In most cases some account of the nests is also given.—On new Marine Mollusca from the Solomon Islands and Australia, by John Brazier. The Volute described at last meeting from an imperfect specimen is redescribed from a perfect example which subsequently became available. Descriptions also are given of a new cone from Flinders, Victoria, of two from the Solomon Islands, and of a species of *Axinæa* from the Gippsland Lakes Entrance, Victoria.—Observations on Papuan land and freshwater shells, with descriptions of new species from New Guinea and Western Australia, by C. F. Ancey. From Western Australia the new species *Trachia Froggatti*, *T. orthocheila* and *T. monogramma* are described and figured from material collected by Mr. W. W. Froggatt. New Papuan shells from German New Guinea are *Sulcobasis leptocochlea* and *Chloritis Möllendorffi*, with which is figured *Pupina Beddomei*, described in an earlier volume of the Society's *Proceedings*. Critical observations on sundry Australian and Papuan shells conclude the paper.—Mr. R. T. Baker exhibited specimens of camphor and camphor oil obtained from the leaves of *Cinnamomum Oliveri*, Bail. The yield of camphor is about $\frac{1}{2}$ per cent. It resembles in odour and appearance the ordinary camphor of commerce. Its melting point was between 173·5 and 175, the melting point of ordinary camphor being given as 175° C. Its specific rotation is also almost identical with that of common camphor. The camphor oil was obtained with the camphor, both floating on the surface of the water, and was separated by pressure. The amount of oil was equal to ·364 per cent., but still retained some camphor in solution.—Mr. R. Etheridge, jun., exhibited some drawings of undetermined leaves, presumably of Tertiary age, from Rollo's Shaft, Coolgardie, forwarded by the Government Geologist of West Australia to Mr. H. Deane. Also specimens of leaves, at present undetermined, from a quarry on the Diamantina River, near Birdsville, a little over the Queensland and S. Australian border, in the former Colony, lat. 25° 55′ S., and long. 138° 25′ E. approximately. Mr. R. L. Jack states that Birdsville is "a Lower Cretaceous locality, but it is quite possible that there are desert sandstone tablelands in the neighbourhood, and the plants may come from one of these."—Mr. Edgar R. Waite exhibited (1) examples of *Typhlops aluensis*, Blgr., from Wai Obi, Vuna Pi, Fiji, where they are known to the natives as "Naota." This species was previously known only from the Solomon Islands, and the new record supplies further evidence of the similarity of the faunas of the two Archipelagoes. (2) A New Zealand fish (*Neptotichthys violaceus*, Hutton) recently caught in Port Jackson, and the first recorded occurrence in Australian waters. (3) Two photographs taken at Layson Island (Hawaiian Islands); one exhibits an immense concourse of albatrosses (identified by Mr. A. J. North as *Diomedea immutabilis*, Rothschild) incubating their eggs, and the other the method of collecting and transporting the eggs. This photograph shows, in addition to wheelbarrows and boxes, two railway trains, the wagons of which are literally piled up with eggs. (4) A block of limestone from the Jenolan Caves polished by Rock Wallabies (*Petrogale penicillata*, Gray).—Mr. Fred. Turner sent for exhibition a series of specimens of the grass *Danthonia pilosa*, R.Br., from near Finley, Riverina, with the infloresence affected with a parasitic fungus. Fifteen other species of Australian grasses were known to him as subject to similar attacks. The subject of the effects produced upon stock by feeding on diseased grasses was one well worth investigation.—Mr. Palmer showed a specimen illustrating what he thought might be considered an undoubted case of root-grafting. Also a clump of the galls of *Brachyscelis duplex*, Schrader, from the Blue Mountains; and a quartz crystal or sacred stone presented to his father by an aboriginal of the Port Stephens tribe, fifty years ago.—Mr. North exhibited the sexes of the rare White-vented Wood Swallow, *Artamus albiventris*, which he had shot on Tyreel Station on the Gwydir River; also the nest and eggs of these birds found at the same time in the top of a hollow stump by Mr. E. Stirton, of Moree. Also some siliceous stones, land-shells, berries, pieces of coloured glass, and a galvanised iron screw procured from a play-house of the Spotted Bower-bird (*Chlamydodera maculata*, Gould) on Weebollabolla Station; the parallel walls of the bower were wholly constructed of dried "spear or corkscrew-grass (*Stipa setacea*) set upright in a slight foundation of fine twigs. Likewise, two sets of the eggs of the Pied Honey-eater (*Certhionyx leucomelas*, Cuvier), procured in Western New South Wales near the South Australian border; and the eggs of another Honey-eater, presumably an undescribed species.

AMSTERDAM.

Royal Academy of Sciences, December 24, 1897.—Prof. van de Sande Bakhuyzen in the chair.—Prof. van Wijhe, on an automatic injector for Teichmann's substance, and presented a paper on it for publication in the *Proceedings*.—Prof. van de Sande Bakhuyzen presented, for publication in the *Proceedings*, (*a*) a paper by J. Stein, of Katwijk, on elements of the planet 424=1896 DF, and ephemeride for 1898; (*b*) on behalf of C. Easton, a paper on the grouping of the stars in the Milky Way; and (*c*) made some remarks on the distribution of stars in space, which will be inserted in the *Proceedings*.—Prof. Schoute continued a communication, presented on his behalf by Prof. Darboux to the Academy of Sciences of Paris, extending his theory, given there, of the determination of focal curves of plane curves in possession of an axis of symmetry to that of the focal surfaces of surfaces, that admit of a plane of symmetry.—Prof. van der Waals presented, on behalf of Dr. P. Zeeman, measurements concerning radiation phenomena in the magnetic field. Photographs have been taken of the outer components of the magnetic triplet. Measurements of the distance of the components for lines in the violet and ultra-violet parts of the spectrum are communicated. In the cases of the metals examined—viz. zinc, cadmium, copper, and tin—the magnetic change is of the same order of magnitude in all of them, and independent of the atomic triplet. Some lines are not affected by magnetism.

DIARY OF SOCIETIES.

THURSDAY, JANUARY 27.

ROYAL SOCIETY, at 4.30.—Mathematical Contributions to the Theory of Evolution. On the Law of Ancestral Heredity: Prof. Karl Pearson, F.R.S.—On the Zoological Evidence for the former Connection of Lake Tanganyika with the Sea: J. E. S. Moore.—(1) The Kelvin Quadrant Electrometer as a Wattmeter and Voltmeter; (2) The Magnetic Properties of almost Pure Iron: E. Wilson.

ROYAL INSTITUTION, at 3.—The Halogen Group of Elements: Prof. J. Dewar, F.R.S

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Notes on the Electro-Chemical Treatment of Ores containing the Precious Metals: Major-General Webber, C.B.

FRIDAY, JANUARY 28.

ROYAL INSTITUTION, at 9.—Instinct and Intelligence in Animals: Prof. C. Lloyd-Morgan.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Condensing Apparatus: H. Williams.

MONDAY, JANUARY 31.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Through Somaliland to Lake Rudolf: H. S. H. Cavendish.

INSTITUTE OF ACTUARIES, at 5.30.—Some Remarks on the Valuation of Endowment Assurances in Groups: George J. Lidstone.

TUESDAY, FEBRUARY 1.

ROYAL INSTITUTION, at 3.—The Simplest Living Things: Prof. E. Ray Lankester, F.R.S.

ZOOLOGICAL SOCIETY, at 8.30.—On a Collection of Fishes from the Rio Jurua, Brazil: G. A. Boulenger, F.R.S.—On the Anatomy of an Australian Cuckoo (*Scythrops novæ-hollandiæ*): F. E. Beddard, F.R.S. —On a Collection of Lepidoptera made by Mr. F. V. Kirby, chiefly in Portuguese East Africa: Dr. A. G. Butler.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Paper to be further discussed: Reservoirs with High Earthen Dams in Western India: W. L. Strange.

MINERALOGICAL SOCIETY, at 8.—Canfieldite from Bolivia; Specific Identity of so-called "Crystallised Brongniartite" and Canfieldite: G. T. Prior and L. J. Spencer.—On Atacamite from Sierra Gorda, Atacama: G. F. Herbert Smith.

ROYAL VICTORIA HALL, at 8.30.—Insects in a London Back Garden: F. Enoch.

WEDNESDAY, FEBRUARY 2.

SOCIETY OF ARTS, at 8.—The Cinematograph: Jules Fuerst.

GEOLOGICAL SOCIETY, at 8.—Contributions to the Glacial Geology of Spitsbergen: Dr. J. W. Gregory and E. J. Garwood.—On a Quartz-rock in the Carboniferous Limestone of Derbyshire: H. H. Arnold-Bemrose.

ENTOMOLOGICAL SOCIETY, at 8.—On the Larva of Pelophila: Rev. W. F. Johnson and G. H. Carpenter.—New Species of American Rhopalocera: F. D. Godman, F.R.S., and O. Salvin, F.R.S.

THURSDAY FEBRUARY 3.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: Comparison of Oxygen with the Extra Lines in the Spectra of the Helium Stars β-Crucis, &c.; also Summary of the Spectra of Southern Stars to the 3½ Magnitude and their Distribution: F. McClean, F.R.S.—The Intimate Structure of Crystals. Part I. Crystals of the Cubic System with Cubic Cleavage—Haloid Salts of the Alkalies: Prof. Sollas, F.R.S.—Researches in Vortex Motion. Part III. On Spiral or Gyrostatic Vortex Aggregates: Prof. W. M. Hicks, F.R.S.—The Pharmacology of Aconitine, &c., considered in relation to their Chemical Constitution: Prof. Cash, F.R.S., and Prof. Dunstan, F.R.S.

ROYAL INSTITUTION, at 3.—The Halogen Group of Elements: Prof. J. Dewar, F.R.S.

LINNEAN SOCIETY, at 8.—On the Muscular Attachment of the Animal to its Shell in some Fossil Cephalopoda (Ammonoidea): G. C. Crick.—The Comparative Anatomy of certain Genera of Cycadaceæ: W. C. Worsdell.

CHEMICAL SOCIETY at 8.—Effect of the Mono-, Di-, and Tri-chloracetyl Groups on the Rotatory Power of Methylic, and Ethylic Glycerates and Tartrates: Percy Frankland, F.R.S., and Dr. Thomas Stewart Patterson.—The Rotation of Ethylic and Methylic Di-monochloracetyltartrates: Percy Frankland, F.R.S., and Dr. Andrew Turnbull.—The Volumetric Estimation of Sodium: H. J. H. Fenton.

FRIDAY, FEBRUARY 4.

ROYAL INSTITUTION, at 9.—Some New Studies in Kathode and Röntgen Radiations: A. A. Campbell Swinton.

GEOLOGISTS' ASSOCIATION, at 7.30.—Annual General Meeting.—Palæolithic Man: E. T. Newton, F.R.S., President.

SATURDAY, FEBRUARY 5.

ROYAL INSTITUTION, at 3.—Cyprus: Prof. P. Geddes.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Nature Study in Elementary Schools: Mrs. Wilson (Macmillan).—Complete Perspective Course: J. H. Spanton (Macmillan).—Practical Electricity and Magnetism: J. Henderson (Longmans).—Ignorance: M. R. P. Dorman (K. Paul).—United States Geological Survey: Atlas to accompany Monograph xxviii. on the Marquette Iron-bearing District of Michigan: Van Hise, Bayley, and Smyth (Washington).—Sewer Gas and its Influence upon Health: H. A. Roechling (Biggs).—Traité de Zoologie Concrète: Y. Delage and E. Herouard. Tome v. Les Vermidiens (Paris, Reinwald).—Le Rationnel; G. Milhaud (Paris, Alcan).—Floods of the Mississippi River: P. Morrill (Washington) —Calendario del Santuario di Pompei, 1898 (Valle di Pompei).—Marcello Malpighi e l'Opera Sua (Milano, Dr. F. Villardi).

PAMPHLETS.—Étude sur la Théorie des Comètes Périodiques: M. O. Callandreau.—A Mechanical Cause of Homogeneity of Structure and Symmetry geometrically investigated: W. Barlow (Royal Dublin Society).—A Paper on the Foundations of Projective Geometry: E. T. Dixon (Cambridge, Deighton) —Harmonic Curves of Three Frequencies: Prof. C. S. Slichter (Wisconsin).

SERIALS.—The Garden, Orchard and Woodland, January (Southampton Street).—Engineering Magazine, January (222 Strand).—Journal of the Royal Statistical Society, December (Stanford).—Proceedings of the Physical Society of London, December (Taylor).—Psychological Review, January (Macmillan).—Essex Institute Historical Collections, Vol. xxxiii. (Salem, Mass.).—West Australian Settler's Guide and Farmer's Handbook, Parts 1 to 4 (Perth, W.A., Wigg).—Astrophysical Journal, December (Chicago).—Quarterly Review, January (Murray).—English Illustrated Magazine, February (198 Strand).—The Home University, No. 1 (West).—Zoologist, January (West).—Journal of Anatomy and Physiology, January (Griffin).—Journal of the Chemical Society, January (Gurney).—Bulletin of the United States Geological Survey, Nos. 87, 127, 130, 135 to 148 (Washington).—Proceedings of the Royal Society of Edinburgh, Vol. xxi. No. 6, Pp. 473-549 (Edinburgh).—Journal of the Sanitary Institute, January (Stanford).—Bulletin of the American Mathematical Society, January (New York, Macmillan).—L'Anthropologie, Tome viii. No 6 (Paris, Masson).—Journal of the Franklin Institute, January (Philadelphia).—Neudrucke von Schriften und Karten über Meteorologie und Erd Magnetismus, Nos. 10 and 11 (Berlin, Asher).—Himmel und Erde, January (Berlin, Paetel).—Monthly Weather Review, October (Washington).

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